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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,273

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Michael Harrison

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EXAMINER

PAIK, SANG YEOP

ART UNIT

PAPER NUMBER

3742

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,273	Applicant(s) HARRISON ET AL.	
	Examiner SANG Y. PAIK	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 19-37 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-17, 19-22, 25-33 and 37 is/are rejected.
- 7) ☒ Claim(s) 9, 23, 24 and 34-36 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/22/08, 7/6/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 8, 10, 11, 29 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Conlin et al (US 3,020,385).

Conlin shows at least three electrodes immersed in the water with a controller that selectively energizes the electrodes, formed from vertically extending plates, in at least two different combinations wherein the electrodes are separately connected by activating different switches so that different combinations of electrodes result in a different fluid resistance across the electrodes.

3. Claims 1, 2, 8, 11, 29, 30, 31 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Noll (US 1,950,511).

Noll shows at least three electrodes, including a plurality of electrodes with a first and a second group of electrodes, immersed in the water with a controller having switches to selectively energizes the electrodes, formed in parallel, from vertically extending plates, in at least two different combinations wherein the electrodes are separately connected by activating different switches so that different combinations of electrodes result in a different fluid resistance across the electrodes.

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4. Claims 1, 2, 8, 11 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang (US 4,633,066).

Chang shows at least three electrodes immersed in the water with a controller having switches to selectively energizes the electrodes, wherein the electrodes are in parallel and are connected with least two different combinations, the electrodes are separately connected by activating different switches so that different combinations of electrodes result in a different fluid resistance across the electrodes.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-5, 7, 22, 25-27, 33 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conlin et al (US 3,020,385), Noll (US 1,950,511), or Chang (4,633,066) in view of Katzman et al (US 6,437,300) or Cooley et al (US 4,692,591).

Conlin, Noll, or Chang shows the heater claimed except for a current detector to detect the electrode current and to activate the switches depending upon the detected current.

Katzman shows that it is known to provide a current sensor to measure the current applied to the electrodes wherein depending upon the measured current a switch, such as a semiconductor switch including a triac, activates or deactivates power to the electrodes. Katzman further shows that the electrodes are deactivated when

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current falls below the predetermined value when water level falls which would be the result of having the water being boiled away. It is also noted that Katzman also shows a controller such as a microprocessor to receive an input indicative of the electrode current from the current detector. Cooley also shows that it is known in the art to provide a current detector to detect the measured current applied to the electrodes immersed in the water wherein depending upon the measured current, the supply of power is turned off or on via the switch or the controller.

In view of Katzman or Cooley, it would have been obvious to one of ordinary skill in the art to adapt Conlin, Noll, or Chang with the current detector or sensor coupled to a control system having a microprocessor with a triac switch to more efficiently and accurately control the power supply to the electrodes to meet the desired heating capacity.

With respect to claim 7, Noll shows a plurality of electrodes having different sizes which would allow different heating capacities.

With respect to claim 27, Chang shows the heater control at the base of the apparatus, and it would have been obvious to one of ordinary skill in the art to provide the semiconductor switches as shown by Katzman at the base of the vessel base as an alternatively suitable location for providing the controller including such switches.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Conlin, Noll, or Chang in view of Katzman or Cooley as applied to claims 3-5, 7, 22, 25-27, 33 and 37 above, and further in view of Jones (US 5,363,471) or Eaton-Williams (US 4,414,269).

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Conlin, Noll, or Chang in view of Katzman or Cooley shows the heater claimed except for explicitly showing for the terminal connection of the electrodes to a neutral terminal and a live terminal.

Jones shows that it is known in the art to provide the electrodes with having terminals connected to the neural and live lines to supply power to the electrodes. Eaton-Williams also shows that it is well known in the art to provide the electrode boiler having a plurality of electrodes wherein the power is supplied in a single phase wherein a neural line and a live line are inherently present.

In view of Jones or Eaton-Williams, it would have been obvious to one of ordinary skill in the art to adapt Conlin, Noll, or Chang, as modified by Katzman or Cooley, with the electrodes connected in a single phase having a live terminal and a neutral terminal as such electrical connection is well known to provide a simple and convenient power connection to an electric heating device.

8. Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaelin (US 1,467,080) or Chang (US 4,633,066) in view of Werner (US 1,553,491) or Novotny et al (US 6,640,048).

Kaelin or Chang shows the heater claimed except the electrodes that are made of carbon.

Werner shows a water heater with electrodes that are made of copper and immersed in the water. Novotny also shows that it is known to make electrode made of carbon and polymer (see column 2, lines 49-55).

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In view of Werner or Novotny, it would have been obvious to one of ordinary skill in the art to adapt Kaelin or Chang with the electrode made of carbon and/or with polymer that is known to provide an adequate means to supply current for heating water there between.

With respect to claim 15, Kaelin further shows the arrangement of plurality of electrodes in with concentric rings arranged about a central rod.

With respect to claim 17, Chang shows the electrodes with rings having different heights, and it would have been obvious to one of ordinary skill in the art to modify the electrode arrangement having different shapes and forms as a matter of a routine experimentation to allow more individualized heating capacities.

9. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Colin et al (US 3,020,385) in view of Wu (US 5,245,691) or Jouas et al (US 5,805,767).

Colin shows the heater claimed except for a tilt switch.

Wu or Jouas shows that it is well known in the art to provide an electric heater with a tilt switch, and it would have been obvious to one of ordinary skill in the art to adapt Colin with a tilt switch to cut off power to the electrodes when the apparatus is tilted for safety purposes.

10. Claims 20, 21 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colin et al (US 3,020,385) or Chang (US 4,633,066) in view of Wilcox (US 2,152,122).

Colin or Chang shows the heater claimed except for a lid with a switch for isolating the power supply means from the electrodes.

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Wilcox shows kettle having a lid having a flange (93) which block the switch or contacts (87) for isolating the power supply means to supply power to the electrodes when the lid is open, and the connecting means (84, 85) for connecting the switch to the power supply. Wilcox shows the connecting means on an outer shell which includes an handle.

In view of Wilcox, it would have been obvious to one of ordinary skill in the art to adapt Colin or Chang with a lid having a switch or means to isolate supplying of the power to the electrodes when the lid is open or removed for safety purposes.

Allowable Subject Matter

11. Claims 9, 23, 24 and 34-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANG Y. PAIK whose telephone number is (571) 272-4783. The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571) 272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SANG Y PAIK/

Primary Examiner, Art Unit 3742